

## Critical Review of Mercury Chemistry

In recent years, there has been a wide range of research projects dealing with the measurement and control of mercury in flue gas. Considerable progress in the understanding of mercury emissions and their behavior has been attained through this work, but inconsistencies and unexpected results have also shown that a better understanding of mercury reaction chemistry is needed. In order to identify where additional research should be directed, Argonne National Laboratory (ANL) was asked by the U.S. Department of Energy (DOE) to conduct a critical review of the available information. To help focus the review on the most important topics, ANL developed a brief survey instrument that was circulated to a number of researchers in the field. Opinions were solicited regarding priorities for such topics as the physical state of the reactants, important chemical species, and specific aspects of reaction chemistry (e.g., kinetics). This paper will present and analyze the results of that survey. Those results are now being used to guide in-depth evaluations of information on mercury chemistry from the technical literature in order to identify key data and significant gaps in current knowledge. The results of this phase of the study will also be summarized in the paper.

### Authors

C. David Livengood  
Argonne National Laboratory  
9700 S. Cass Ave.  
Argonne, IL 60439  
630-252-3737 630-252-3443(fax)  
[dlivengood@anl.gov](mailto:dlivengood@anl.gov)

Marshall H. Mendelsohn  
Argonne National Laboratory  
Argonne, IL 60439

Scott A. Renninger  
National Energy Technology Laboratory  
U.S. Department of Energy  
Morgantown, WV 26507